

Foreign Exchange

Algorithmic Trading Global: **UBS VWAP**



UBS Electronic Trading

Technology with a **human edge.**

Algorithm:

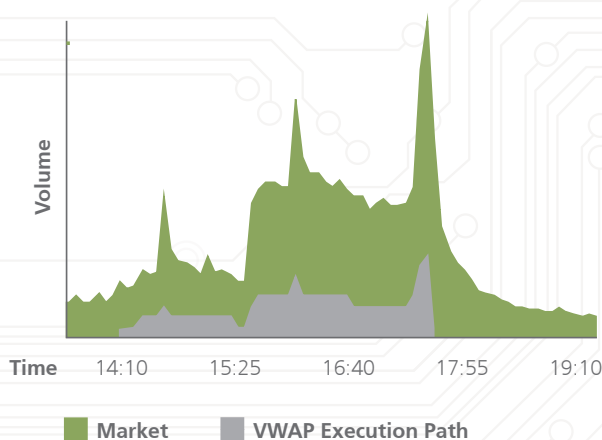
UBS Volume-Weighted Average Price (UBS VWAP)

UBS VWAP is a volume based order that attempts to trade in line with historic UBS market volume¹ over the time you specify. You may consider this strategy suitable if you wish to execute less volume at times of the day when there is historically less liquidity in order to minimize your market impact.

VWAP taps into our internal liquidity sources, including:

- UBS Price Improvement Network (PIN-FX)² is our matching engine where your Spot FX orders may match other client and UBS³ orders at prices the same or better than the UBS Price⁴;
- UBS eFX is our electronic FX streaming price. Price formation and hedging are driven by quantitative models managing risk for a large⁵ volume of diverse client flow.
- UBS Voice is our voice FX streaming price. Pricing can vary from eFX pricing because our voice desk manages a separate risk book.

UBS VWAP attempts to trade in line with historic UBS market volume over a specified period.



Source: UBS December 2014. For illustrative purposes only.

VWAP uses proprietary logic to attempt to reduce the number of times VWAP must cross the spread in order to maintain its execution schedule. By using a variety of parameters, such as liquidity, volatility and order size, the algorithm can make trading decisions.

There are times when this logic becomes noticeable when trading TWAP. For example, it is not always necessary to immediately trade when UBS receives a VWAP order. It may be more advantageous to join the bid or offer, and then wait to be hit or lifted rather than immediately pay the spread. Equally, if it sees a narrow spread or unusually large bid/offer, it may cross the spread to get ahead of schedule.

Parameters

- Start/Expiry Time
- Limit Price
- Max Spread
- Trigger Price
- Liquidity Pool

Start/Expiry Time

Select a Start Time and an Expiry Time for your VWAP order. Note that minimum duration is one minute.

Limit Price

Set a Limit Price to ensure that child orders will remain within the bounds you specify for the parent VWAP order. Note that if the bid/ask moves out of limit, once it returns, the algorithm is designed to work to “catch up” the needed volume. However, if the price moves back out of limit, the algorithm may not be able to complete your order by the expiry time.

¹ Historic UBS volume curves are calculated from the previous 30 days of eFX Spot trading volume in the given currency pair.

² Note that PIN-FX is a new order book with low activity and in most cases your order will be routed to execute against UBS eFX or Voice prices where the cost of your execution is included in the UBS Price. 0.4% of executions resulting from orders handled by our smart order router occurred in PIN-FX, 3 Months data as of Jan 22, 2015.

³ Orders in PIN-FX may include manually entered hedging orders from UBS FX Traders.

⁴ The UBS Price or Spread is a client specific price formed by the UBS eFX or Voice Desk. We do not provide all clients with the same spreads or liquidity. A client's price may factor in brokerage, risk, sales coverage and other client services.

⁵ #1 Electronic Trading Market Share, Source: Greenwich 2014 FX Survey.

⁶ The algorithm typically compares the current UBS Spread to the average UBS Spread for the same 30 min window of the previous 20 days; however the algorithm reserves the right to review and alter these time periods in order to optimize performance.

Max Spread

Add a Max Spread in pips to instruct the algorithm to protect your order during unexpected economic events. Setting this parameter typically prevents your VWAP order from executing when the visible UBS market spread exceeds your specified Max Spread.

Trigger Price

Set a Trigger Price for your Tap order to instruct the algorithm to remain inactive until the Mid of the UBS Price goes through your specified level during UBS market hours.

Liquidity Pool

De-select UBS Voice Desk Liquidity if you do not wish your VWAP order to execute on prices from the UBS voice desk. Note that parent orders are not visible to voice desk traders, even if you select Voice Desk Liquidity.

Currencies Supported:

- AUD, CAD, CHF, EUR, GBP, JPY, NZD, USD
- DKK, NOK, SEK
- CNH, CZK, HKD, HUF, ILS, MXN, PLN, RON, SGD, THB, TRY, ZAR

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Talk to your UBS FX representative or contact us for more information.

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